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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,528	08/15/2001	Jingyu Zhou	15-978	1710

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EXAMINER

TRAN, DZUNG D

ART UNIT PAPER NUMBER

2638

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/930,528

Applicant(s)

ZHOU ET AL.

Examiner

Dzung D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 and 24-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's election with traverse of claims 1-14 and 23 in the reply filed on 05/09/2005 is acknowledged. The traversal is on the ground(s) that the Examiner would not be unduly burdened if forced to examine existing claims 1-44 and because new claim 44 includes the elements of group I and group III, claim 44 will encompass substantially all of the subject matter required to be searched for the claims in group I and group III. This is not found persuasive because in regard to the Applicant's arguments that there "would not be unduly burdened if forced to examine existing claims 1-44", the Examiner would be required not only to search additional information, writing up additional rejections for different inventions would require additional burden. In regard to Applicants arguments that claim 44 encompass substantially all of the subject matter required to be searched for the claims in group I and group III, the addition of "setting up and establishing a communication path along an end-to-end route whenever an operational parameter is above a margin tolerance or a test threshold" to the subject matter of claim 18 does not include "substantially all of the subject matter" of claims 1-14 and 23. Claim 44 would be patentably distinct from group I.

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 9, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pillai U.S. Publication no. 2001/0053696 in view of Izadpanah U.S. Publication no. 2002/0122230.

Regarding claims 1 and 11, Pillai discloses a method for routing an end to end network with a plurality of flexibility sites (20, 210, 220, 230, 240 of figure 1) connected by links, comprising:

(a) calculating a physical end-to-end route between a source node and a destination node (page 1, paragraph 0012);

(b) selecting (equivalent to setting-up) a communication path along said end-to-end route (page 1, paragraph 0013);

(c) calculating (or testing) a Quality of Service constraint (equivalent to an operational parameter, e.g. QoS parameter can be intensity of the signal, power of the signal, Q value, BER, ...) of said communication path.

Pillai differs from claim 1 of the present invention in that Pillai does not specifically disclose for comparing of Quality of Service constraint (equivalent to an operational parameter) with a threshold (equivalent to a margin tolerance) and declaring said communication path as established, whenever signal power (equivalent to operational parameter or QoS) is above a threshold (equivalent to a margin tolerance).

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Izadpanah discloses a method for monitoring an optical link of an WDM optical network by comparing the signal power (equivalent to operational parameter or QoS) that transmits over an optical link with a power threshold, and declaring communication path as established, if signal power (equivalent to operational parameter or QoS) is above a threshold or margin tolerance (page 5, paragraph 0056).

At the time of the invention was made, it would have been obvious to a person of ordinary skill to include the teaching of Izadpanah in the system of Pillai. One of ordinary skill in the art would have been motivated to do that in order to determine the link or path condition (e.g. good path or failure path) so that the system manager can re-route the failure path to the good path. Thus it increases the system reliability.

Regarding claims 2 and 12, Pillai discloses the route and location manager 100 continuously monitoring said established communication path so that the route data base 110 to be update on a real time basic with changes in the route relevant information (page 2, paragraphs 0021-0023).

Regarding claims 3 and 4, Izadpanah discloses the threshold power level derived from environmental information of the link (equivalent to communication path start of life margin), see page 5, paragraph 0056.

Regarding claim 5, Pillai discloses the calculation of the optimal route is based on an optimality criterion. The best route can be one that gives the shortest path (e.g. less cost) between the source and destination (less number of hops), thus the maintenance threshold must based on the cost of the communication path.

Regarding claims 6 and 7, whether to determine the maintenance threshold by

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averaging a plurality of values measured for said operational parameter during fast and slow variances in operation of said network or by integrating a plurality of values measured for said operational parameter over a time interval is obviously an engineering design choices. One of ordinary skill in the art would have been motivated to do that in order to determine the best route based on the optimality criterion of the QoS.

Regarding claims 9 and 14, Pillai discloses re-routing the connection path (equivalent to abandoning the communication path), see page 3, paragraph 0046.

4. Claims 8 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Pillai U.S. Publication no. 2001/0053696 in view of Berg et al. U.S. Publication no. 2003/0151802.

Regarding claim 8, as per claim 1 above, Pillai discloses all the limitations except for improving said operational parameter (or signal power) by inserting said free regenerator in said communication path and marking said free regenerator as allocated to said communication path.

Berg discloses that to achieve long haul optical transmission, regenerator (repeaters) and/ or optical amplifiers are deployed along the optical transmission line in multiple locations, for boosting the signal on the fiber (page 1, paragraph 0005).

Since it is notoriously known that optical re-generator can be placed anywhere along the transmission path in an optical system to boost the signal and to restore the signal to a desired level. At the time of the invention was made, it would have been

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obvious to a person of ordinary skill to include the teaching of Berg in the system of Pillai. One of ordinary skill in the art would have been motivated to incorporate optical re-generator along the transmission lines in order to boost the signal and to restore the signal to a desired level that become attenuated during the transmission.

Regarding claim 23, Pillai discloses a network apparatus for routing an end to end network between a source node 240 and a destination node 230 along a route passing through an intermediate node 220, 210, comprising:

a route and location manager 100 (equivalent to a line control system) for collecting performance information on said communication path (page 2, paragraphs 0021-0023); and

a call manager 300 (equivalent to a network management system) for switching said communication path, whenever the performance of said communication path is outside an operation range (page 2, paragraphs 0024-0029).

Pillai does not disclose a pool of regenerators connected at said intermediate node.

Berg discloses that to achieve long haul optical transmission, regenerator (repeaters) and/ or optical amplifiers are deployed along the optical transmission line in multiple locations, for boosting the signal on the fiber (page 1, paragraph 0005).

Since it is notoriously known that optical re-generator can be placed anywhere along the transmission path in an optical system to boost the signal and to restore the signal to a desired level. At the time of the invention was made, it would have been obvious to a person of ordinary skill to include the teaching of Berg in the system of

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Pillai. One of ordinary skill in the art would have been motivated to incorporate optical re-generator along the transmission lines in order to boost the signal and to restore the signal to a desired level that become attenuated during the transmission.

5. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pillai U.S. Publication no. 2001/0053696 in view of Hanley U.S. Patent no. 6,198,910.

Regarding claims 10 and 13, as per claim 1 above, Pillai discloses all the limitations except for QoS or operational parameter is any of the end-to-end Q value and the BER of said communication path.

Hanley discloses QoS parameter or operational parameter is any of the end-to-end Q value and the BER of said communication path (abstract, col. 2, lines 49-58, col. 4, lines 56-61).

At the time of the invention was made, it would have been obvious to a person of ordinary skill to include the teaching of Hanley in the system of Pillai. One of ordinary skill in the art would have been motivated to do that in order to determine the link or path condition (e.g. good path or failure path) so that the system manager can re-route the failure path to the good path. Thus it increases the system reliability.



***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a. Lu et al. U.S. Patent no. 6,757,494. Wavelength routing in a photonic network
  - b. Berg et al. U.S. Publication no. 2003/0151802. Highly scalable modular optical amplifier based subsystem
  - c. Simard et al. U.S. Publication no. 2002/0114062. Optical performance monitoring for D/WDM networks
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dzung Tran  
07/06/2005